2012

# Nebraska Summary: S869 Massey Ferguson 8670

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# SUMMARY OF OECD TEST 2720–NEBRASKA SUMMARY 869
# MASSEY FERGUSON 8670 DIESEL
# DYNA VT TRANSMISSION
## chassis S/N V187001 and higher

### POWER TAKE-OFF PERFORMANCE

| Power HP *(kW)* | Crank shaft speed rpm | Diesel Consumption Gal/hr *(l/h)* | lb/hp.hr *(kg/kW.h)* | D.E.F. Consumption Hp.hr/gal *(kW.h/l)* | D.E.F. Consumption Gal/hr *(l/h)* | Mean Atmospheric Conditions |
|---|---|---|---|---|---|---|
| **MAXIMUM POWER AND FUEL CONSUMPTION** | | | | | | |
| **Rated Engine Speed—(PTO speed—1066 rpm)** | | | | | | |
| 262.7 *(195.9)* | 2100 | 14.56 *(55.12)* | 0.390 *(0.237)* | 18.04 *(3.55)* | 0.83 *(3.14)* | |
| **Standard Power Take-off Speed (1000 rpm)** | | | | | | |
| 293.1 *(218.6)* | 1970 | 15.78 *(59.73)* | 0.378 *(0.230)* | 18.57 *(3.66)* | 0.92 *(3.49)* | |
| **Maximum Power (1 hour)** | | | | | | |
| 298.9 *(222.9)* | 1950 | 15.93 *(60.31)* | 0.374 *(0.228)* | 18.76 *(3.70)* | 0.94 *(3.56)* | |
| **VARYING POWER AND FUEL CONSUMPTION** | | | | | | |
| 262.7 *(195.9)* | 2100 | 14.56 *(55.12)* | 0.390 *(0.237)* | 18.04 *(3.55)* | 0.83 *(3.14)* | Air temperature |
| 225.4 *(168.1)* | 2120 | 12.88 *(48.74)* | 0.401 *(0.244)* | 17.50 *(3.45)* | 0.66 *(2.51)* | 72°F *(22°C)* |
| 169.9 *(126.7)* | 2131 | 10.08 *(38.14)* | 0.417 *(0.253)* | 16.86 *(3.32)* | 0.54 *(2.06)* | Relative humidity |
| 113.7 *(84.8)* | 2140 | 7.48 *(28.31)* | 0.461 *(0.281)* | 15.20 *(3.00)* | 0.38 *(1.42)* | 21% |
| 57.1 *(42.6)* | 2149 | 5.00 *(18.94)* | 0.615 *(0.374)* | 11.42 *(2.25)* | 0.22 *(0.82)* | Barometer |
| ---- ---- | 2157 | 2.71 *(10.27)* | ---- ---- | ---- ---- | 0.00 *(0.00)* | 30.1" Hg *(102.0 kPa)* |

Maximum torque - 965 lb.-ft. *(1308 Nm)* at 1500 rpm
Maximum torque rise - 46.9%
Torque rise at 1700 engine rpm - 35%
Power increase at 1950 engine rpm - 13.8%

### DRAWBAR PERFORMANCE
**(Unballasted - Front Drive Engaged)**
**FUEL CONSUMPTION CHARACTERISTICS**

| Power Hp *(kW)* | Drawbar pull lbs *(kN)* | Speed mph *(km/h)* | Crank-shaft speed rpm | Slip % | Fuel Consumption lb/hp.hr *(kg/kW.h)* | Fuel Consumption Hp.hr/gal *(kW.h/l)* | Temp.°F *(°C)* cool-ing med | Air dry bulb | Barom. inch Hg *(kPa)* |
|---|---|---|---|---|---|---|---|---|---|
| **Maximum Power—Turtle 9** | | | | | | | | | |
| 219.3 *(163.5)* | 14630 *(65.08)* | 5.62 *(9.04)* | 2101 | 2.9 | 0.461 *(0.281)* | 15.07 *(2.97)* | 176 *(80)* | 70 *(21)* | 29.2 *(98.9)* |
| **75% of Pull at Maximum Power—Turtle 9** | | | | | | | | | |
| 168.7 *(125.8)* | 10950 *(48.71)* | 5.78 *(9.30)* | 2122 | 2.0 | 0.482 *(0.293)* | 14.42 *(2.84)* | 174 *(79)* | 72 *(22)* | 29.2 *(99.0)* |
| **50% of Pull at Maximum Power—Turtle 9** | | | | | | | | | |
| 115.2 *(85.9)* | 7320 *(32.55)* | 5.90 *(9.50)* | 2133 | 1.2 | 0.531 *(0.323)* | 13.10 *(2.58)* | 169 *(76)* | 72 *(22)* | 29.0 *(98.2)* |
| **75% of Pull at Reduced Engine Speed—Turtle 11** | | | | | | | | | |
| 169.1 *(126.1)* | 10940 *(48.66)* | 5.80 *(9.33)* | 1803 | 2.0 | 0.448 *(0.272)* | 15.51 *(3.05)* | 165 *(74)* | 70 *(21)* | 29.2 *(98.9)* |
| **50% of Pull at Reduced Engine Speed—Turtle 11** | | | | | | | | | |
| 114.6 *(85.5)* | 7270 *(32.34)* | 5.91 *(9.51)* | 1810 | 1.4 | 0.483 *(0.293)* | 14.39 *(2.83)* | 165 *(74)* | 72 *(22)* | 29.2 *(99.0)* |

**Location of tests:** DLG - Test Centre, Technology and Farm inputs, Max-Eyth-Weg 1, D-64823 Gross-Umstadt, Germany

**Dates of tests:** March - May, 2012.

**Manufacturer:** AGCO S.A. ZA, n2, BP 60307, Avenue Blaise Pascal, 60026 Beauvais, Cedex, France

**CONSUMABLE FLUIDS: Fuel** No. 2 Diesel **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.843 **Fuel weight** 7.04 lbs/gal *(0.842 kg/l)* **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.10 lbs/gal *(1.093 kg/l)* **Oil SAE** 10W40 **API service classification** CI4 **Transmission and hydraulic lubricant** BP STOU 10W/40 **Front axle lubricant** SAE 85W90 API GL5

**ENGINE: Make** Sisu Diesel **Type** six cylinder vertical with turbocharger, air to air intercooler and D.E.F(diesel exhaust fluid) technology **Serial No.** W423 **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.370" x 5.709" *(111.0 mm x 145.0 mm)* **Compression ratio** 16.7 to 1 **Displacement** 513 cu in *(8419 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** thermostat and variable speed fan

**CHASSIS: Type** front wheel assist **Serial No.** V319022 **Tread width** rear 72.8" *(1850 mm)* to 74.8" *(1900 mm)* front 70.9" *(1800 mm)* to 76.8" *(1950 mm)* **Wheelbase** 122.2" *(3105 mm)* **Hydraulic control system** direct engine drive **Transmission** CVT. A combination of mechanical and hydrostatic sections allow an infinite speed adjustment within the ranges noted. The transmission has two mechanical ranges. **Nominal travel speeds mph *(km/h)*** forward: Low range 0-18 *(0-30)*, high range 0-25 *(0-40)* reverse: Low range 0-12 *(0-19)*, high range 0-12 *(0-39)* **Clutch** a foot pedal controls the hydrostatic oil flow **Brakes** multiple wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 1000 rpm at 1970 engine rpm **Unladen tractor mass** 25200 lb *(11430 kg)*

## DRAWBAR PERFORMANCE

**(Unballasted - Front Drive Engaged)**
**MAXIMUM POWER AT SELECTED SPEEDS**

| Power Hp *(kW)* | Drawbar pull lbs *(kN)* | Speed mph *(km/h)* | Crank-shaft speed rpm | Slip % | Fuel Consumption lb/hp.hr *(kg/kW.h)* | Hp.hr/gal *(kW.h/l)* | Temp.°F*(°C)* cool-ing med | Air dry bulb | Barom. inch Hg *(kPa)* |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Turtle 6 | | | | |
| 207.7 *(154.9)* | 24890 *(110.72)* | 3.13 *(5.04)* | 1999 | 15.0 | 0.520 *(0.316)* | 13.32 *(2.62)* | 183 *(84)* | 82 *(28)* | 28.9 *(97.9)* |
| | | | | | Turtle 7.5 | | | | |
| 245.1 *(182.8)* | 21995 *(97.84)* | 4.18 *(6.72)* | 1949 | 5.5 | 0.453 *(0.276)* | 15.35 *(3.03)* | 154 *(68)* | 61 *(16)* | 29.3 *(99.1)* |
| | | | | | Turtle 9 | | | | |
| 247.7 *(184.7)* | 18035 *(80.23)* | 5.15 *(8.29)* | 1948 | 4.0 | 0.451 *(0.275)* | 15.46 *(3.05)* | 154 *(68)* | 61 *(16)* | 29.3 *(99.1)* |
| | | | | | Turtle 11 | | | | |
| 246.5 *(183.8)* | 14965 *(66.56)* | 6.18 *(9.94)* | 1953 | 3.1 | 0.449 *(0.274)* | 15.51 *(3.06)* | 158 *(70)* | 61 *(16)* | 29.3 *(99.1)* |
| | | | | | Turtle 13 | | | | |
| 244.3 *(182.2)* | 12710 *(56.54)* | 7.21 *(11.60)* | 1949 | 2.6 | 0.453 *(0.276)* | 15.36 *(3.03)* | 163 *(73)* | 59 *(15)* | 29.3 *(99.1)* |
| | | | | | Turtle 15 | | | | |
| 241.1 *(179.8)* | 10795 *(48.03)* | 8.38 *(13.48)* | 1952 | 2.1 | 0.458 *(0.280)* | 15.20 *(3.00)* | 165 *(74)* | 59 *(15)* | 29.2 *(99.0)* |
| | | | | | Turtle 17 | | | | |
| 237.5 *(177.1)* | 9235 *(41.09)* | 9.64 *(15.52)* | 1956 | 1.7 | 0.462 *(0.282)* | 15.05 *(2.97)* | 178 *(81)* | 59 *(15)* | 29.2 *(99.0)* |
| | | | | | Rabbit 9 | | | | |
| 230.5 *(171.9)* | 16680 *(74.20)* | 5.18 *(8.34)* | 1950 | 3.8 | 0.481 *(0.292)* | 14.44 *(2.84)* | 163 *(73)* | 79 *(26)* | 28.9 *(97.9)* |
| | | | | | Rabbit 11 | | | | |
| 237.8 *(177.3)* | 14220 *(63.26)* | 6.27 *(10.09)* | 1951 | 3.0 | 0.468 *(0.284)* | 14.84 *(2.92)* | 185 *(85)* | 75 *(24)* | 28.9 *(97.9)* |
| | | | | | Rabbit 13 | | | | |
| 241.1 *(179.8)* | 12170 *(54.13)* | 7.43 *(11.96)* | 1954 | 2.6 | 0.459 *(0.279)* | 15.14 *(2.98)* | 178 *(81)* | 75 *(24)* | 28.9 *(97.9)* |
| | | | | | Rabbit 15 | | | | |
| 244.2 *(182.1)* | 10660 *(47.41)* | 8.59 *(13.82)* | 1954 | 2.2 | 0.454 *(0.276)* | 15.33 *(3.02)* | 181 *(83)* | 59 *(15)* | 29.3 *(99.1)* |
| | | | | | Rabbit 17 | | | | |
| 244.3 *(182.2)* | 9360 *(41.63)* | 9.79 *(15.76)* | 1951 | 1.8 | 0.454 *(0.276)* | 15.33 *(3.02)* | 174 *(79)* | 59 *(15)* | 29.3 *(99.1)* |
| | | | | | Rabbit 19 | | | | |
| 239.4 *(178.5)* | 8225 *(36.59)* | 10.91 *(17.56)* | 1956 | 1.5 | 0.460 *(0.280)* | 15.13 *(2.98)* | 170 *(77)* | 61 *(16)* | 29.3 *(99.1)* |

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments.

**NOTE 1:** The performance figures on this report apply to tractors with chassis serial numbers V187001 and higher.

**NOTE 2:** The performance figures on this report are the result of replacing the electronic engine control module of the Massey Ferguson 8650 with the Massey Ferguson 8670 module.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's claims of 54% torque rise, 15% power bulge, nor 3 point lift capacity of 22760 lbs *(10323 kg)*. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2720,** Nebraska Summary 869, January 30, 2013.

Roger M. Hoy
Director

M.R. Riley
P.J. Jasa
J.D. Luck
Board of Tractor Test Engineers

| **TRACTOR SOUND LEVEL WITH CAB** | **dB(A)** |
|---|---|
| At no load in Turtle - 4.6 mph *(7.5 km/h)* - no load | 71.0 |
| Bystander | --- |

**TIRES AND WEIGHT** — **Tested Without Ballast**

| | |
|---|---|
| **Rear Tires** - No., size, ply & psi*(kPa)* | Two 710/75R42;***;12*(80)* |
| **Front Tires** -No., size, ply & psi*(kPa)* | Two 600/65R34;**;12*(80)* |
| **Height of Drawbar** | 22.2 in *(565 mm)* |
| **Static Weight with operator** - Rear | 14100 lb *(6395 kg)* |
| - Front | 11265 lb *(5110 kg)* |
| - Total | 25365 lb*(11505 kg)* |

## HYDRAULIC PERFORMANCE

| | |
|---|---|
| CATEGORY: III | |
| Quick Attach: No, Yes | |
| OECD Static test | |
| Maximum force exerted through whole range: | 17850 lbs *(79.4 kN)* (claw type lower links) |
| | 20345 lbs *(90.5 kN)* (Quick hitch) |
| i) Sustained pressure at compensator cutoff: | 2755 psi *(190 bar)* |
| | **two outlet sets combined** |
| ii) Pump delivery rate at minimum pressure: | 46.2 GPM *(174.9 l/min)* |
| iii)Pump delivery rate at maximum | |
| hydraulic power: | 37.9 GPM *(143.6 l/min)* |
| Delivery pressure: | 2380 psi *(164 bar)* |
| Power: | 52.6 HP *(39.3 kW)* |
| | **single outlet set** |
| ii) Pump delivery rate at minimum pressure: | 28.9 GPM *(109.3 l/min)* |
| iii)Pump delivery rate at maximum | |
| hydraulic power: | 26.1 GPM *(103.2 l/min)* |
| Delivery pressure: | 2290 psi *(158 bar)* |
| Power: | 34.9 HP *(27.2 kW)* |

**HITCH DIMENSIONS AS TESTED—NO LOAD**

| | Claw lower links | | Quick Hitch | |
|---|---|---|---|---|
| | inch | *mm* | inch | *mm* |
| A | 31.9 | *810* | 31.9 | *810* |
| B | 14.6 | *370* | 14.6 | *370* |
| C | 19.1 | *484* | 19.1 | *484* |
| D | 15.9 | *405* | 15.9 | *405* |
| E | 12.4 | *315* | 12.4 | *315* |
| F | 13.0 | *330* | 13.0 | *330* |
| G | 40.4 | *1025* | 40.4 | *1025* |
| H | 2.0 | *50* | 2.0 | *50* |
| I | 17.7 | *450* | 17.7 | *450* |
| J | 27.4 | *695* | 27.4 | *695* |
| K | 24.8 | *630* | 24.8 | *630* |
| L | 52.4 | *1330* | 52.4 | *1330* |
| *L' | -- | -- | 56.3 | *1430* |
| M | 29.8 | *757* | 33.7 | *857* |
| N | 42.9 | *1090* | 42.9 | *1090* |
| O | 9.1 | *230* | 9.8 | *250* |
| P | 54.3 | *1380* | 50.4 | *1280* |
| Q | 41.5 | *1055* | 41.2 | *1046* |
| R | 37.0 | *940* | 37.0 | *940* |

*L' to Quick Attach ends